REMARKS/ARGUMENTS

The amendments to Claim 1 are supported by the claim as originally filed and by original Claim 6 and specification page 11, lines 5-6. Support for the amendment to Claim 6 is found at specification page 11, lines 5-11. The amendments to Claim 16 are supported by the claim as originally filed, by original Claim 6 and by specification page 11, lines 5-6. New Claims 17 and 18 are supported by original Claim 1 and by specification page 3, lines 4-8, page 6, lines 9-16, page 11, lines 18-23, page 13, lines 7-8, and page 15, lines 11-17. New Claim 19 is supported by Claim 6 and specification page 11, lines 5-11. No new matter has been entered.

The claim objection and the rejection under 35 USC 112 have been addressed by the above amendments.

The rejection of Claims 1-16 as obvious over Fritz in view of Bambara is traversed.

As pointed out by the above amendments and several cited portions of the present specification, Applicants have discovered a process for determining the suitability of a silane crosslinkable polyethylene for forming a silane crosslinked polyethylene through the use of IR analysis. An important benefit of this process is the fact that it allows for the recycling of silane crosslinkable polyethylene that is determined to be unsuitable for curing.[1]

Perhaps one of the most interesting features of Applicants' presently claimed process is that the IR analysis is done at an area of the IR spectrum that measures the Si-O-C bond of the silane.[2] What is surprising about this is the fact that this bond, the Si-O-C bond, is present in both silane crosslinkable polyethylene *and* in simple physical mixtures of vinyl silane and polyethylene - i.e., is present in both the starting mixture used to produce the silane crosslinkable polyethylene and in the product produced. Thus, the fact that this bond can be

[1] Once cured the material is not recyclable. See specification page 3, lines 3-10 and page 15, lines 11-17.

[2] See, e.g., Figure 3 of Fritz noting the peak in the range of 1185 cm^{-1} to 1020 cm^{-1}.

used to characterize how the silane crosslinkable polyethylene will behave during crosslinking is quite remarkable.

This is made clear in Figure 3 of Fritz, discussed at the bottom of page 123 of the reference, where a physical mixture of vinyl silane (VTOMS) and polyethylene (PE-LLD) are analyzed by IR. As shown in Figure 3, the Si-O-C bond shows increasing area with increasing amount of unreacted vinyl silane. Recognizing this problem, Fritz specifically advises those of ordinary skill in the art that analysis should occur at 1375 cm^{-1} in order to avoid the influence of ungrafted vinyl silane. See the last three lines at page 123 of the reference.

As explained at specification page 3, lines 18ff, others have taken the approach shown in Figure 3 of Fritz. While Applicant recognized, in the paragraph bridging specification pages 3-4, that the IR peak of the Si-O-C bond does not provide information on whether the vinyl silane is chemically bonded to the polyethylene, nevertheless they found, contrary to the teachings in the art, that when a sample of the silane crosslinkable polyethylene is processed into film and then analyzed that the Si-O-C bond IR signature can and does provide a reliable method for predicting the gel content of the ultimate, crosslinked product.

Certainly nothing in Fritz suggests this process. In fact, Fritz teaches away from the presently claimed process at the bottom of page 123 thereof in its direction not to use an IR absorption in the neighborhood of 1060 cm^{-1}, the absorption band reported therein for the Si-O-C bond. The fact that Applicant has shown that this portion of the IR spectrum does provide a reliable indicator for gel content in the ultimate crosslinked product is thus clearly patentable over the combination of references, as Bambara is cited simply for the purpose of describing how gel content may be measured in a crosslinked product.

Because no one in the prior art disclosed or suggested Applicants' presently claimed combination of processing a sample of the silane crosslinkable polyethylene into a film which is then analyzed by IR spectroscopy at, e.g., 1060 cm^{-1} and thereafter correlating the IR peak area with gel content, Applicants respectfully request the reconsideration and withdrawal of the outstanding rejections, and the passage of this case to Issue.

Respectfully submitted,

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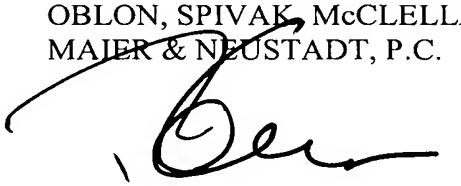

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